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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,797	02/12/2002	Franz Sorg	LO29-003	9143

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WELLS ST. JOHN P.S.  
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SPOKANE, WA 99201

EXAMINER

BUDD, MARK OSBORNE

ART UNIT PAPER NUMBER

2834

DATE MAILED: 08/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/075,797

Applicant(s)

SORG ET AL.

Examiner

Mark Budd

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36-38 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 20,22,23,28,32,34 and 45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2-12-02&4-12-04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17, 18, 24-26 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Pla.

Pla teaches a system for damping vibrations in a transformer fluid that extracts heat from the transformer windings. Oscillations (vibrations) in the fluid are detected by sensor #66, #67, after the detection the results are supplied in the form of a controlled loop #20 to piezoelectric actuators #64, #65.

By actuation of said actuators oscillations are produced, which are in antiphase to the oscillations produced by turbulence (pressure variations) in the fluid, and whose frequency and amplitude are at least appropriately the same. See col. 1, lines 23-46 and col. 3, line 31-col. 4, line 41. Applicant has argued that Pla cannot anticipate these claims since Pla doesn't explicitly use the term frequency. Pla does specifically mention that the damping signal must be out of phase and of equal amplitude to the signal to be damped, and concludes that the object is to create dynamic pressure oscillations in the transformer fluid #22 caused by the operating transformer core and windings". To achieve the effect, it would be necessary that the frequency of the drive and damping signals be equal as would be apparent to one of ordinary skill in the art. Thus, Pla inherently considered the frequency as well as the amplitude in order to have an operable device.

Claims 39-43, 48 and 49 are rejected under 35 U.S.C. 102(b) as being anticipated by Nye or Goehegan.

Nye (figs. 1-5, col. 5 ln 19-40) and Geohegan (figs. 1B, 1C) both teach a system for damping unwanted vibrations in a structure comprising piezoelectric drivers and sensors connected in a control servo loop with a signal processor.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19, 21, 27, 20, 30, 33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pla.

As noted above, Pla teaches the system for damping oscillations in a fluid, Pla doesn't explicitly teach locating the drivers/sensors at areas of maximum expected deformation and doesn't explicitly use piezoelectric sensors. However, since optimization of a known device to a particular application has long been held to be within the skill expected of the routineer, selection of drive/sensor sights for maximum efficiency would have been obvious to one of ordinary skill in the art. Substitution of equivalent sensors would also be within the skill expected of the routineer, and since piezo elements used for sensors are well known per se (official notice taken) it would have been obvious to one ordinary skill in the art that Pla could use piezoelectric sensing elements.

Claims 43, 44, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nye or Geohegan.

As noted above, Nye and Geohegan teach the vibration damping system for a structural application. The structures of Nye and Geohegan do not explicitly contain cooling channels and are not explicitly an optical or semiconductor lithography device. However, adding cooling for its known, expected benefits would have been obvious to one of ordinary skill in the art. Fluid carrying conduits are among the most common cooling structures used (official notice taken). The mere inclusion of a known device or system into any prior art structure is not seen to make the total combination unobvious. Also since no explicit optical device or semiconductor lithography device is recited the mere mention of such devices fails to patentably distinguish from the systems taught by Nye or Geohegan. That is to say it would have been obvious to one of ordinary skill in the art to utilize the damping systems of Nye or Geohegan for any known structures and not limit their applications to the examples explicitly shown by these references.

Claims 20, 22, 23, 28, 32, 34 and 45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 36-38 are allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark O Budd whose telephone number is (703)308-3929. The examiner can normally be reached on M. Budd from 6am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, <sup>Darren Schuberg</sup>~~Nester Ramirez~~, can be reached on (571)272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Budd/ds

08/11/04

  
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